

What is claimed is:

- 1 1. A digital signal processing circuit comprising:
2 a chain of processing units to receive indications of discrete input values, each processing
3 unit being associated with one of a group of filter coefficients; and
4 a tap selection circuit to select a group of the processing units of the chain to produce an
5 indication of a filtered discrete output value for each discrete input value.

- 1 *Sub* 2. The processing unit of claim 1, wherein the chain of processing units comprises a
B1 2 systolic chain.

- 1 3. The processing circuit of claim 1, wherein the tap selection circuit selects a
2 number of taps of the processing circuit.

- 1 4. The processing circuit of claim 1, wherein the group of processing units
2 progressively accumulate a summed value to form each output value and the tap selection circuit
3 comprises:
4 a multiplexer to designate a point in the chain at which the accumulation begins.

- 1 *Sub* 5. The processing circuit of claim 4, wherein each processing circuit comprises a
B2 2 first input terminal to receive the indications of the discrete input values from a processing circuit
3 input line common to the processing circuits and a second input terminal to receive the
4 indications of the discrete input values from another processing circuit, the multiplexer coupling
5 the first and second terminals of one of the processing circuits together to designate the point in
6 the chain at which the accumulation begins.

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1 6. The processing circuit of claim 1, wherein each processing circuit comprises:
 2 a first adder circuit to generate an indication of a summation of two of the discrete input
 3 values; and
 4 a multiplier circuit coupled to the first adder circuit to generate an indication of a product
 5 of a coefficient associated with said each processing circuit and the summation of the two
 6 discrete values.

1 7. The processing circuit of claim 6, further comprising:
 2 a second adder circuit coupled to the first multiplier circuit to combine the summation of
 3 the two discrete input values with a progressive summation provided by another processing
 4 circuit.

1 8. The processing circuit of claim 7, wherein the tap selection circuit comprises:
 2 a multiplexer to selectively furnish an indication of a zero to the second adder circuit of
 3 one of the processing units to designate a point where the progressive sum begins.

1 9. The processing circuit of claim 1, wherein the tap selection circuit comprises:
 2 a register storing bits indicative of the processing units in the group.

1 10. The processing circuit of claim 1, wherein each processing unit comprises:
 2 a register storing the indication of the associated filter coefficient.

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1 11. The processing circuit of claim 1, wherein the processing circuit comprises a
 2 finite impulse response filter.

1 12. The processing circuit of claim 1, wherein the processing circuit comprises an
 2 infinite impulse response filter.

1 13. A digital signal processing circuit comprising:
2 a processing chain having a selectable number of taps; and
3 a tap selection circuit coupled to the processing chain to selectively establish the number
4 of taps of the chain.

1 14. The processing circuit of claim 13, wherein the tap selection circuit comprises:
2 a multiplexer to select one of the taps as the beginning tap in the chain.

1 15. The processing circuit of claim 14, wherein the multiplexer sets a cumulative sum
2 at the selected tap to zero.

1 16. The processing circuit of claim 14, wherein the multiplexer sets a delay at the
2 selected tap to zero.

1 17. The processing circuit of claim 13, wherein the tap selection circuit comprises:
2 a register storing bits indicative of the number of taps.

1 18. The processing circuit of claim 13, wherein the tapped delay line comprises:
2 registers storing indications of filter coefficients associated with the taps.

1 19. The processing circuit of claim 13, wherein the processing circuit comprises a
2 finite impulse response filter.

1 20. The processing circuit of claim 13, wherein the processing circuit comprises an
2 infinite impulse response filter.

1 21. A method comprising:
2 providing a processing chain line having a fixed number of taps;
3 disabling some of the taps of the chain; and
4 using the remaining taps to establish a finite impulse response filter.

- 1 22. The method of claim 21, wherein the disabling comprises:
2 selecting one of the taps as the beginning tap in the delay line.
- 1 23. The method of claim 21, wherein the disabling comprises:
2 setting a cumulative sum at one of the taps to zero.
- 1 24. The method of claim 21, further comprising:
2 storing bits indicative of the number of remaining taps.
- 1 25. The method of claim 21, further comprising:
2 storing rewritable indications of filter coefficients associated with the taps.